

CBM POWERED BOLT R&R GENERIC

OBJECTIVE:

This procedure removes and replaces a failed CBM Powered Bolt.

LOCATION:

Installed: Active CBM Docking Ring

Stowed: √Maintenance Database

DURATION:

40 minutes (55 minutes if powered bolt is jammed in nut assembly)

PARTS:

CBM Powered Bolt (P/N 683-13450-001)

CBM Powered Bolt - Nut Assembly (P/N 683-13503-001) (only required if bolt is jammed in nut)

MATERIALS:

None

TOOLS REQUIRED:

Equipment Bag

Tether

Scopemeter

Kit E:

Ratchet 3/8" Drive

Ratchet 1/4" Drive

2" Ext 1/4" Drive

3/8" to 1/4" Adaptor

Kit G:

30-200 in-lbs Trq Wrench, 3/8" Drive

Kit F:

5/16" Socket, 1/4" Drive

Kit C:

3/8" Socket, 3/8" Drive

Kit A:

1-5/16" Combination Wrench

Powered Bolt Tool Kit

Spanner Wrench

Kit N:

1/4" x 5/16" Ratcheting Box Wrench

#10 Trq Bit

Kit J:

Large Needle Nose Pliers

REFERENCED PROCEDURE(S):

POWERED BOLT ASSEMBLY CHECKOUT

SAFE

WARNING

Failure to remove power can result in electrical shock hazard.

1. ✓CBM Controller Pwr - Off

ACCESS

2. If required, remove vestibule closeout for access by unfastening 1/4 turn fasteners.
Tm pry stow.
3. If required, remove ACBM alignment guides for access by loosening fasteners (five per alignment guide) (Ratchet 3/8" Drive, 3/8" Socket).
Tm pry stow.

REMOVE

4. Demate power connector P2 from bolt actuator power receptacle J1.
5. If required for access, remove harness from RTL actuator power receptacle.
6. Demate powered bolt load cell sensor cable from connector bracket (connector P3).

NOTE

Spanner Wrench is labeled to identify correct threaded collar removal (OFF) and installation (ON) orientation. See Figure 1.

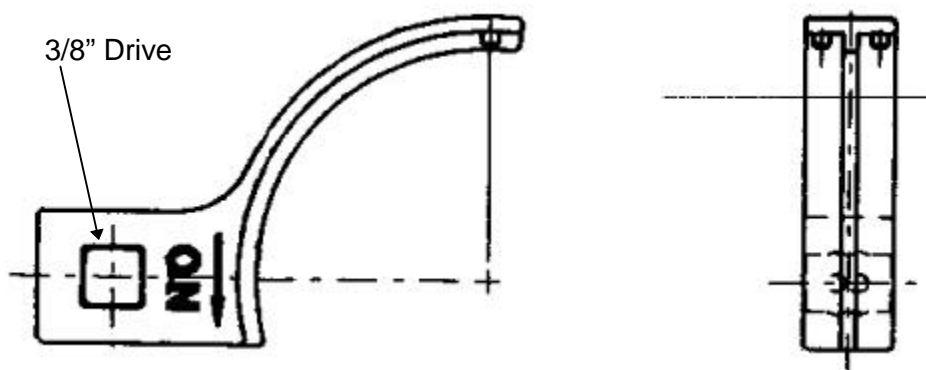


Figure 1.- Spanner Wrench for Actuator Collar.

7. Break torque on threaded collar by inserting spanner wrench pin into one of the holes on threaded collar (Ratchet 3/8" Drive, Spanner Wrench).
8. Turn threaded collar approximately five turns (until collar is loose).

9. Remove powered bolt actuator from powered bolt.
Temporarily stow.

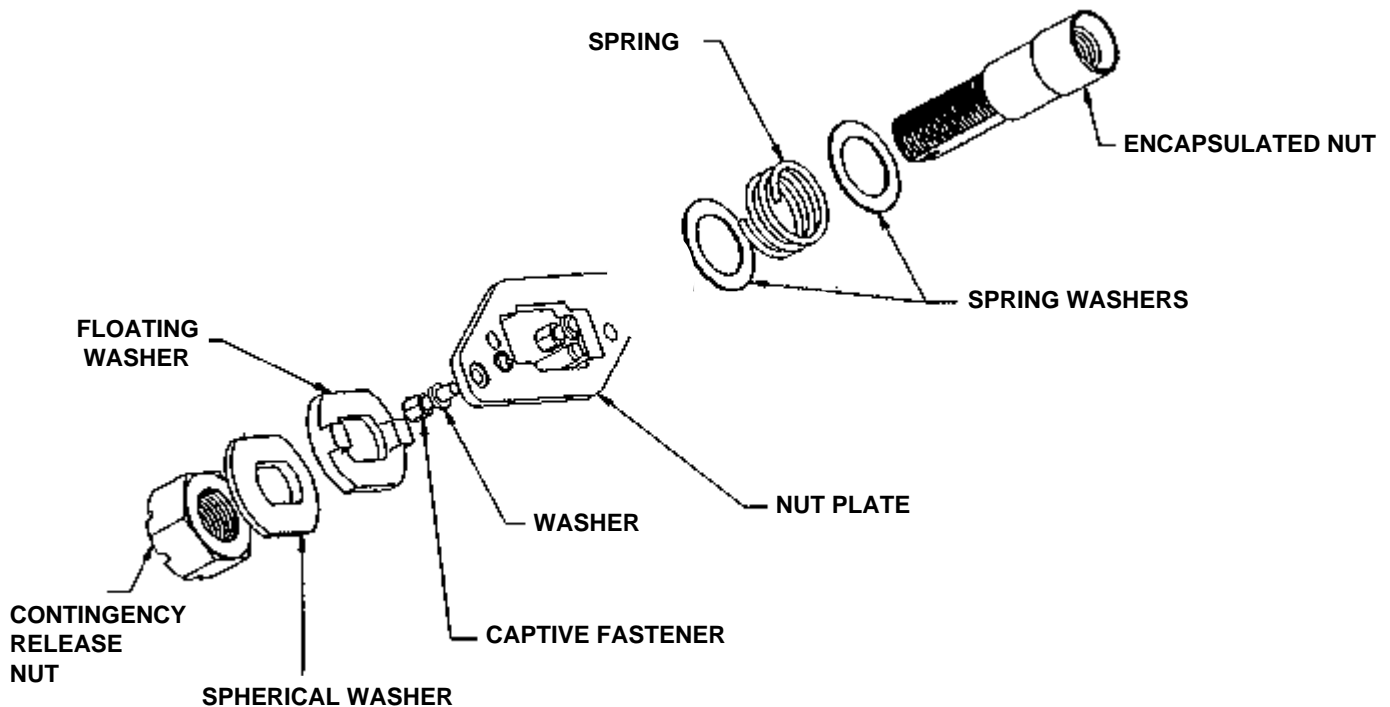


Figure 2.- Powered Bolt Nut Assembly.

10. If required for access, remove connector brackets (1/4" x 5/16" Ratcheting Box Wrench, #10 Torq Bit).
Temporarily stow bracket
11. If Powered Bolt is jammed in encapsulated nut
Remove powered bolt nut assembly contingency release nut (steps 12 --- 18).
See Figure 2.
If Powered Bolt not jammed in encapsulated nut
Go to step 19.
12. If required, remove PCBM alignment guides for access by loosening fasteners (five per alignment guide) (Ratchet 3/8" drive, 3/8" Socket).
Temporarily stow.
13. Remove cotter pin from end of powered bolt nut assembly (Needle Nose Pliers).
Temporarily stow.

14. Remove contingency release nut and washers (two) from powered bolt nut assembly (1-5/16" Combination Wrench).
Tm pry stow.

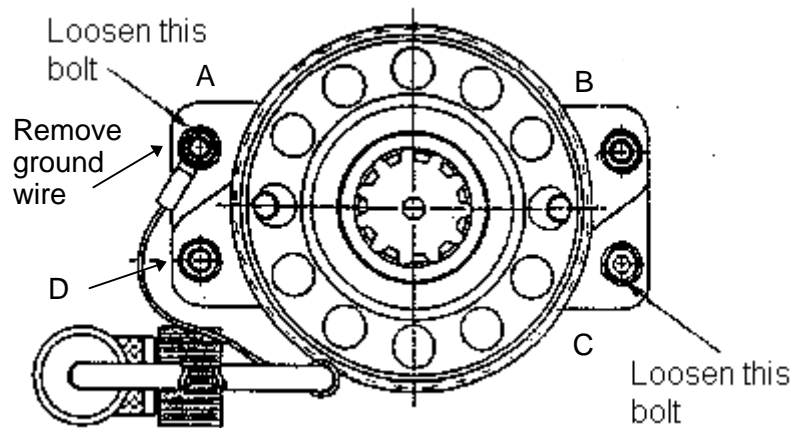


Figure 3.- Powered Bolt - Top View (with Actuator Removed).

NOTE

In steps 15 or 16 loose items may be freed (spring, two washers). See Figure 2. In step 15, ground wire will be released when bolt A is loosened. Note orientation of wire so that it may be reinstalled in a similar manner on spare powered bolt. See Figure 3.

15. Remove powered bolt, encapsulated nut, from ACBM by loosening hex head fasteners (two) (Ratchet 1/4" drive, 2" Ext, 5/16" Socket).
Tm pry stow.
See Figure 3.
16. Remove powered bolt nut plate by loosening captive fasteners (two) (Ratchet 1/4" drive, 2" Ext, 5/16" Socket).
Tm pry stow Nut Plate and loose assembly items.

NOTE

Two alignment pins on spare powered bolt nut assembly should mate with corresponding sockets on PCBM docking ring.

17. Install powered bolt nut assembly on PCBM ring, snug fasteners (two) (Ratchet 1/4" Drive, 2" Ext, 5/16" Socket).

NOTE

Four pins on PCBM alignment guide should mate with corresponding sockets on PCBM docking ring.

18. If PCBM alignment guides were removed, reinstall by rotating fasteners (five), 1/4 turn past snug (Ratchet 3/8" Drive, 3/8" Socket).
Go to step 20.
19. Remove powered bolt from ACBM by loosening fasteners (two) (Ratchet 1/4" Drive, 2" Ext, 5/16" Socket, 1/4" Drive).
Label, tmpy stow.
See Figure 3.

REPLACE

NOTE

Two alignment pins on bottom side of powered bolt mounting plate should mate with corresponding pin sockets on ACBM docking ring.

20. Insert bottom of powered bolt into recessed hole in ACBM ring.
21. Slide powered bolt into alignment holes until metal to metal contact is felt.
22. Slide lug on ground cable under washer of fastener A or C.
See Figure 3.
23. Rotate fasteners (two), 1/4 turn past snug (Ratchet 1/4" Drive, 5/16" Socket), torque to 43 --- 48 in-lb ((30-200 in-lbs) Trq Wrench, 3/8" to 1/4" Adaptor, 2" Ext, 5/16" Socket).
24. Check for continuity between casing of powered bolt actuator and ACBM ring structure.

NOTE

Final alignment of actuator should be such that power/data receptacle on actuator is pointed in inboard direction.

25. Mate output gear of powered bolt actuator to input gear of powered bolt.
26. Rotate actuator while pressing it against powered bolt until actuator pins seat in corresponding holes in powered bolt.
27. Turn threaded collar on actuator 1/2 turn past snug, torque to 145 ± 15 in-lbs (Spanner Wrench, Ratchet 3/8" Drive, (30-200 in-lbs) Trq Wrench).
28. Mate power connector P2 to bolt actuator power receptacle J1.
29. Mate powered bolt load cell sensor cable to connector bracket (connector P3).

CHECK-OUT

30. Perform POWERED BOLT ASSEMBLY CHECKOUT, all (SODF: OSO).

CLOSE-OUT

NOTE

Four pins on PCBM alignment guide should mate with corresponding sockets on ACBM docking ring.

31. If ACBM alignment guides were removed for maintenance, replace alignment guides by rotating fasteners (five) 1/4 turn past snug (Ratchet 3/8" Drive, 3/8" Socket).
32. If vestibule closeout was removed for maintenance, install vestibule closeout by fastening 1/4 turn fasteners.

POST MAINTENANCE

33. Stow failed powered bolt, failed powered bolt-nut assembly (if applicable), tools, equipment.
34. Update Maintenance Database.